

CLAIMS

We claim:

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1. A high efficacy stick antiperspirant/deodorant free of added stearyl alcohol and comprising in weight percent based on the total weight of the composition:

- (a) 30-70% volatile cyclomethicone;
- (b) 10-25% of an antiperspirant active;
- 10 (c) 1-15% of an emollient;
- (d) 1-14% of polyethylene comprising one or more members selected from the group consisting of homopolymers and copolymers of polyethylene wherein the polyethylene (i) is at least 90% linear; (ii) has a molecular weight in the range of 300-3000; (iii) has a melting point in the range of 50-129 degrees C; and (iv) has a polymer backbone of $\text{CH}_3\text{CH}_2-(\text{CH}_2-\text{CH}_2)_n-\text{CH}_2-\text{CH}_3$, where n is an average number and is selected to be in the range of 10-106; and
- (e) 0.3-7% of a wax as a co-gellant with the polyethylene wherein the wax has a melting point in the range of 40-97 degrees C;

20 provided that the ratio of wax:polyethylene is in the range of 1:1-1:10.

2. A stick as claimed in Claim 1 comprising 40-50% of a volatile silicone.

3. A stick as claimed in Claim 1 wherein the emollient comprises a mixture of two 25 or more emollients.

4. A stick as claimed in Claim 1 comprising 3-12 % emollient.

5. A stick as claimed in Claim 1 wherein the emollient comprises a non-volatile 30 silicone.

6. A stick as claimed in Claim 5 wherein the emollient comprises a 10-350 centistoke dimethicone.

35 7. A stick as claimed in Claim 1 wherein the emollient is a member of the group consisting of

- (a) fats and oils represented by Formula III:



Formula III

wherein each of R¹, R², and R³ may be the same or different and have a carbon chain length (saturated or unsaturated) of 7 to 30;

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(b) hydrocarbons selected from the group consisting of paraffin, petrolatum, hydrogenated polyisobutene, and mineral oil;

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(c) esters of general structure would be R⁴CO-OR⁵ wherein the chain length for R⁴ and R⁵ hydrocarbon groups is in the range of 7-30 and can be saturated or unsaturated, straight chained or branched;

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(d) saturated and unsaturated fatty acids which have general structure R⁶COOH with the R⁶ group being a straight chain hydrocarbon with a carbon chain length between 7-10;

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(e) saturated and unsaturated fatty alcohols which have a general structure R⁷COH where R⁷ is a straight chain hydrocarbon with a carbon length of 7 to 10;

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(f) lanolin and its derivatives selected from the group consisting of lanolin, lanolin oil, lanolin wax, lanolin alcohols, lanolin fatty acids, isopropyl lanolate, ethoxylated lanolin and acetylated lanolin alcohols;

(g) alkoxylated alcohols wherein the alcohol portion is selected from aliphatic alcohols having 2-18 carbons, and the alkylene oxide portion is selected from the group consisting of ethylene oxide, and propylene oxide having a number of alkylene oxide units from 2-53;

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(h) silicones as the linear organo-substituted polysiloxanes which are polymers of silicon/oxygen with general structure:

(1) (R¹⁰)₃SiO(Si(R¹¹)₂O)_xSi(R¹²)₃ where R¹⁰, R¹¹ and R¹² can be the same or different and are each independently selected from the group consisting of phenyl and C1-C60 alkyl; or

(2) HO(R¹⁴)₂SiO(Si(R¹⁵)₂O)_xSi(R¹⁶)₂OH, where R¹⁴, R¹⁵ and R¹⁶ can be the same or different and are each independently selected from the group consisting of phenyl and C1-C60 alkyl; and

(i) mixtures and blends of two or more of the foregoing.

8. A stick as claimed in Claim 1 comprising 3-10% polyethylene.

9. A stick as claimed in Claim 1 wherein the polyethylene has a melting point in the range of 50-70 degrees C.

10. A stick as claimed in Claim 1 wherein the polyethylene has a melting point in
5 the range of 60-70 degrees C.

11. A stick as claimed in Claim 1 wherein the polyethylene has a melting point in the range of 70-129 C.

10 11. A stick as claimed in Claim 1 wherein the wax has a melting point in the range of 40-80 degrees C.

13. A stick as claimed in Claim 1 wherein the wax is a microcrystalline wax having a melting point in the range of 60-97 degrees C.

15 14. A stick as claimed in Claim 1 additionally comprising an effective amount of an antimicrobial agent.

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